

## **Texaco Restoration Fund Project Proposal Form**

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**Title of Project: West March's Point Shoreline Restoration**

- 1) *Location*  
Fidalgo Bay/North & West March's Point. (Fig. 1).

- 2) *Project Goals and Description.*

Goal – enhance natural process and nearshore functions that support viable forage fish spawning, and juvenile salmon rearing.

Description – Through a multi-phase project, DNR, the Swinomish Indian Tribal Community, and Skagit River System Cooperative will work with the appropriate land owners and local governments to accomplish all work. The components of this project are supported by recommendations in a variety of scientific and community based

assessments, including:

- Johannessen, J. and A. MacLennan. March 6, 2007. "March's Point Geomorphic Assessment & Restoration Prioritization"; Study prepared for the Skagit County Marine Resources Committee (MRC) by Coastal Geologic Services, Inc.
- Beamer, E. and A. McBride. 2007. North Fidalgo Island Nearshore Habitat Restoration Vision, Skagit River System Cooperative.
- Penttila, DE. 2005. Documented spawning areas of the Pacific herring, surf smelt, and Pacific sand lance in Skagit County, Washington. Washington Department of Fish and Wildlife, LaConner.
- People for Puget Sound. April 30, 2004. "Northern Skagit County Bays and Shoreline Habitat Conservation and Restoration Blueprint"; Habitat Planning Tool Prepared for Skagit County MRC.
- Williams, BW, S Wyllie-Echeverria, and A Bailey. 2003. Historic nearshore habitat change analysis for Fidalgo Bay and Guemes Channel. Prepared for the City of Anacortes by Battelle Marine Sciences Laboratory. Sequim, WA.
- Antrim, LD, AB Borde, RM Thom, and JA Southard. 2003. Plan for habitat protection, restoration, and enhancement for Fidalgo Bay and Guemes Channel. Prepared for the City of Anacortes by Battelle Marine Sciences Laboratory. Sequim, WA.
- People for Puget Sound. 2001. March's Point rapid shoreline inventory, Skagit County, WA.
- Penttila, DE. 1995. Baitfish resources and habitats of Fidalgo Bay, Skagit County, WA. Washington Department of Fish and Wildlife, Mount Vernon.
- Puget Sound Nearshore Project. 2003. Guidance for Protection and Restoration of Nearshore Ecosystems of Puget Sound. Washington Department of Fish and Wildlife, Olympia.

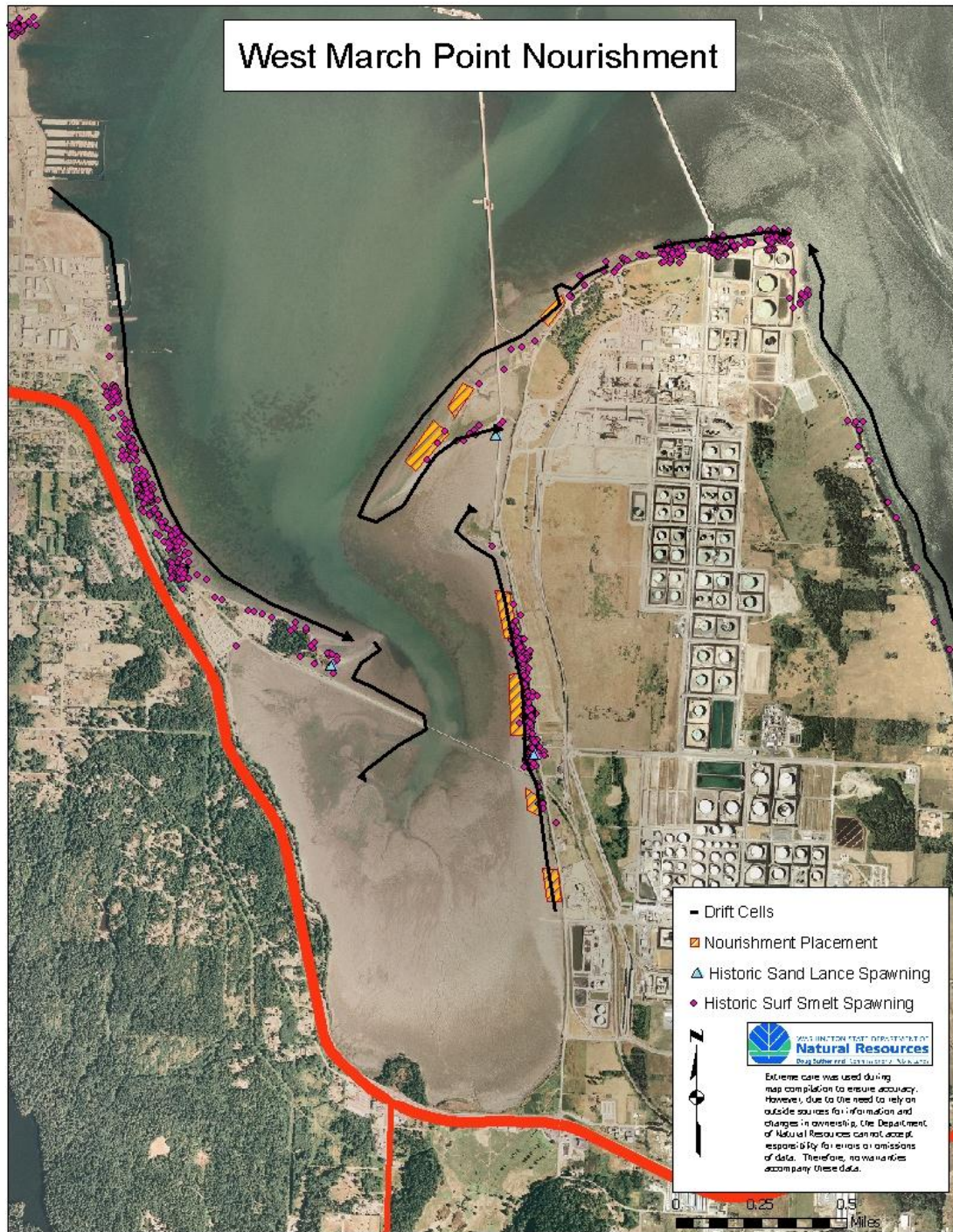
This proposal synthesizes and builds upon restoration feasibility and preliminary designs developed by the efforts listed above. The implementation unit for restoration is the drift cell, in keeping with a landscape process based approach to restoration. Successful restoration of the nearshore processes of the western and northern shoreline of March's Point requires a multi year, phased approach that will address the immediate loss of beach sediments through nourishment as well as the long-term need for restoration of those sediment sources. Funding requested through the Texaco Restoration Fund will be used to focus on the near-term objectives of a larger vision for restoration.

The goal of this project is to improve the habitat value of existing conditions through beach cleanup and sediment nourishment, and to complete design work that will allow restoration of the natural landscape processes that create and maintain nearshore habitat at March's Point. Process-based restoration is thought to sustainably maximize beneficial ecological conditions for all nearshore biota, including forage fish (Puget Sound Nearshore Project 2003). Funding requested from the Texaco Restoration Fund will be used to enhance the habitat through several near-term phases. Additional funding will be sought to address the long-term need for sediment source restoration. This project represents the first step towards restoration of the nearshore processes that support healthy forage fish spawning habitat along the western and northern shoreline of March's

Point.

**Phase 1:** Beach Clean Up and Nourishment – Shoreline development, particularly hard armoring and boat launch construction, has greatly reduced the natural sediment budget to March's Point beaches, along with removal of some intertidal beach sediment soon after the early 1990s oil spill along west March's Point. These changes have resulted in a reduction in the quality and quantity of upper beachface spawning habitat for forage fish (surf smelt, *Hypomesus pretiosus* and sandlance, *Ammodytes hexapterus*), which were historically documented along north and west March's Point (Figure 1). Modifications of the net shore-drift processes have also caused a significant reduction in the size and stability of Crandall Spit itself. Removing rip rap material that has migrated down the beachface and placement of appropriate beach nourishment sediment along northwestern March's Point and north Crandall Spit will quickly restore lost habitat to depleted areas, and will forestall further habitat degradation until sediment source restoration can be implemented.

In addition to removal of rip rap that has toppled to the intertidal beach (Figure 2), an old, unused concrete barge landing (with failed rock shore defense) will also be removed from the beach (Figure 3). A derelict/decayed barge will be evaluated for removal and removed if feasible (Figure 4). This phase will also include an assessment of opportunities to increase the amount of shade bearing vegetation along historically documented forage fish spawning beaches. The project proponents have received initial support for this phase from the owners of those properties where sediment will be placed and conceptual approach and preliminary estimates have been completed (Johannessen 2007). For this phase, Texaco Restoration Funding will be used for consultation, final design, permitting, implementation, and pre- and post-project monitoring.

**Figure 1. Conceptual Design of Proposed Nourishment Placement**



**Figure 2. Migrating Rip Rap**



**Figure 3. Old Barge Landing**



**Figure 4. Derelict Barge**



**Phase 2:** March's Point Boat Launch Redesign – The Tesoro emergency response boat and spill equipment launch along the northwest shoreline of March's Point currently acts as a major impediment to natural sediment transport, as the very high ramp acts a barrier to net shore-drift. A study of the feasibility to replace the existing launch with a new elevated boat launch, to allow a more natural flow of sediment, will be completed in Phase 2 of this project. Texaco Restoration Funding would be used to conduct the initial assessment and design work. Additional funding would be sought to supplement Texaco Restoration funds for this phase.

**Figure 5. Boat Launch & Drift Cells**



Graphic showing the Nearshore drift and the location of the existing boat launch.

**Figure 6. Elevated Boat Launch**



An elevated boat launch, such as the structure depicted above, allows unimpeded alongshore sediment transport while maintaining boat launch access. This type of boat ramp is also much less likely to allow sediment or debris to cover the ramp.



**Phase 3:** Crandall Lagoon Hydrology Restoration –This effort will focus on potential restoration of the historic tidal flow to Crandall Lagoon. These types of habitats are important for the rearing of juvenile Chinook salmon and potentially for a variety forage fish and other fish species. While currently open to tidal hydrology, the Crandall lagoon entrance is artificially constructed and oriented in a manner that appears to be exacerbating sediment depletion on the north and southwest shores of the spit. The project proponents will continue to examine the feasibility, costs and benefits associated with restoration alternatives that will seek to open the lagoon at its historic ingress/egress while providing for access and protection of refinery infrastructure.

This area is owned by Shell Oil and initial permission has been given to assess the feasibility of this project. Funding will be requested through the Texaco Restoration Fund for the feasibility assessment and initial design work. Consultation with Shell Oil throughout this phase will allow the operational and security concerns of the refinery to be addressed. Additional funding will be sought to design and implement restoration pending the results of this feasibility assessment.

**Figure 7. Crandall Lagoon Current & Historic Hydrology**





- 3) *Describe the goals, measurable objectives, and deliverables of this project (how will success be measured and who will do the monitoring?) –*

The goal of this project is to sustainably improve habitat for forage fish and other nearshore biota through process-based restoration of sediment starved beaches. Primary project objectives are to (1) prevent further habitat loss and improve existing habitat conditions in the near-term by nourishing sediment-starved beaches and increasing vegetative shading of spawning habitat, (2) to address sediment transport impediments by removing several derelict structures and barges and designing a sediment-passing boat launch, and (3) to assess alternatives for restoring historic hydrologic regime to Crandall Spit. All three of these objectives will improve the quantity and quality of estuarine habitat on site for a wide variety of native fish and wildlife, including juvenile salmonid and forage fish species.

Success of this project will be measured through pre- and post-project forage fishspawn surveys, and beach face sediment and structure monitoring. Monitoring will be conducted cooperatively amongst project partners, and results will be compiled in a final report to be distributed amongst partners and funding agencies.

#### Measures of Project Success

Measures of project success follow directly from project goals and objectives. Success can be quantified in terms of:

1. Spawning usage and success by forage fish species.
2. Seasonal occupation of nearshore habitat by juvenile Chinook and other salmon.
3. Persistence and self-sustainability of alongshore sediment transport and beach formation processes.
4. Seasonal occupation of the restored habitat by other nearshore biota.
5. Time series trends that show persistence and self-sustainability in measures 1 through 4.

- 4) *Describe how this project will benefit forage fish resources.*

This project will benefit forage fish resources by enhancing the existing conditions that create and maintain forage fish spawning and rearing habitat. Currently there is very little spawning habitat left on north and west March's Point due primarily to shoreline armoring. Previous spawning beaches have eroded down to hardpan. Placement of beach nourishment sediment and reintroduction of shade bearing vegetation where possible will substantially improve forage fish spawning habitat in the near-term. Restoration of habitat-forming processes will allow this habitat to persist over time.

- 5) *Rationale/Justification.*

This proposal is scientifically grounded and collaboratively initiated to meet goals outlined in several resource management plans, including the Skagit Chinook Plan, Skagit County Marine Resource Committee mission and objectives, and the Fidalgo Bay Aquatic Reserve Management Plan. Based upon best available science, project

proponents believe that this plan will create maximum ecological potential for the project area, with predictable and sustainable results over the long term, within the constraints of existing land uses and natural landscape processes. The sites proposed for restoration are important for re-establishing habitat connectivity for juvenile salmon exiting the Swinomish Channel after migrating from the Skagit River delta.

6) *What is the estimated timeline/duration of this project?*

Phases 1, 2 and 3 will be initiated at the same time, with property owner consultation, final feasibility and design, and initial consultation, respectively. Construction for Phase 1 could begin as early as fall of 2009.

7) *What is the estimated cost of this project?*

See attached for a detailed budget proposal.

8) *Are there any matching funds available?*

The project proponents have identified several possible sources for matching funds, but no formal proposals have been submitted.

9) *What other agencies or organizations are involved or support this project?* Washington State Department of Natural Resources, the Swinomish Indian Tribal Community, and the Skagit River System Cooperative are leading this effort. As the major landowners of potential nourishment and restoration sites Tesoro Refining and Marketing and Shell Oil Products Co. will be involved. The project proponents will also seek to partner with the City of Anacortes and the Skagit County Marine Resources Committee.

10) *Is there an obligation or requirement to perform this project under permit conditions or existing agreements?* No

<b>Phase 1 - Beach Cleanup &amp; Nourishment</b>	<b>Funding Requested</b>	<b>Matching Funds</b>
Survey and Design	\$30,000	
Physical monitoring plan and baseline monitoring	\$8,000	
Biological monitoring plan and baseline monitoring	\$10,000	
Permitting	\$9,000	
Landowner Consultation		\$10,000
Construction		
<i>Project materials</i>	<i>\$2,000</i>	
<i>Mobilization</i>	<i>\$5,000</i>	
<i>Traffic/flagging</i>	<i>\$5,000</i>	
<i>Nourishment Material</i>	<i>\$140,000</i>	
<i>Site prep, rock cleanup, nourishment grading</i>	<i>\$20,400</i>	
Construction Total	\$172,400	
Contract Administration & Oversight		\$25,000
Plantings	\$5,000	
Year 1 Physical Monitoring	\$10,000	\$5,000.00
Year 1 Biological Monitoring	\$10,000	\$5,000.00
<b>Total</b>	<b>\$254,400</b>	<b>\$45,000</b>
<b>Phase 2 - Boat Launch Redesign</b>		
Boat Launch Assessment	\$6,000	\$5,000.00
Boat Launch Design	\$13,000	
<b>Total</b>	<b>\$19,000</b>	<b>\$5,000.00</b>
<b>Phase 3 - Crandall Spit Inlets</b>		
Hydraulic Assessment	\$15,000	\$5,000.00
Restoration Design Concept	\$15,000	
<b>Total</b>	<b>\$30,000</b>	<b>\$5,000.00</b>
<b>Total Request</b>	<b>\$303,400</b>	
<b>Total Matching</b>	<b>\$55,000</b>	
<b>Project Total</b>	<b>\$358,400</b>	